

**WHAT IS CLAIMED IS:**

1. A device for capturing and removing particulate matter from a liquid medium comprising;

a) a hollow tubular member having a first end and a second end;

5 b) an agitator disposed in said hollow tubular member and configured to generate circulation of the liquid with the particulate matter disposed therein;

c) fluid return openings in said hollow tubular member to allow fluid to enter into the tubular member;

10 d) a particulate capturing member slidably mounted on said hollow tubular member and movable from a particulate retaining position to a particulate discharging position; and

e) a mechanism for engaging and moving said device into and out of said liquid.

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2. The invention as defined in claim 1 wherein said particulate capturing member is in sealing engagement with said tubular member when in the particulate capturing position.

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3. The invention as defined in claim 2 wherein said particulate capturing member is generally frustro-conical shaped.

4. The invention as defined in claim 2 wherein said particulate collecting member has at least one surface positioned to engage an external receptacle to cause relative sliding movement of said particulate gathering member with respect to said tubular member.

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5. The invention as defined in claim 1 wherein said agitator includes a propeller mounted on a propeller shaft.

6. The invention as defined in claim 1 wherein said particulate collecting member includes drain openings to allow fluid to drain therefrom when the device is removed from the liquid.

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7. The invention as defined in claim 2 wherein said at least one surface includes at least one member attached to said particle collecting member.

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8. The invention as defined in claim 1 wherein said mechanism for engaging and moving said device is connected to said tubular member.

9. The invention as defined in claim 5 wherein said propeller is disposed within said hollow tubular member.

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10. The invention as defined in claim 2 wherein the tubular member includes a sealing surface positioned to seal against the particulate matter collecting member in the particle collecting position.

5 11. A method for removing particulate matter from a liquid medium comprising the steps of:

A. providing a device for capturing and removing particulate matter from a liquid medium comprising;

1) a hollow tubular member having a first end and a second end;

10 2) an agitator disposed in said hollow tubular member and configured to generate circulation of the liquid with the particulate matter disposed therein;

3) fluid return openings in said hollow tubular member to allow fluid to enter into the tubular member;

15 4) a particulate capturing member slidably mounted on said hollow tubular member and movable from a particulate retaining position to particulate discharging position;

5) a mechanism for engaging and moving said device into and out of said liquid;

20 B. inserting said device in said liquid having the particulate matter, with the particulate matter collector in the particle collecting position;

C. causing the agitator to circulate the liquid having the particulate matter therein to circulate and collect a portion of the particulate matter in the particulate matter collector during said circulation;

D. ceasing the circulation;

5 E. removing the device from the liquid with the particulate matter in said particulate matter collector to a discharge position; and

F. moving the particulate matter collector to the particle discharge position.

10 12. The invention as defined in claim 11 wherein said particulate capturing member is in sealing engagement with said tubular member when in the particulate capturing position.

15 13. The invention as defined in claim 12 wherein said particulate capturing member is generally frustro-conical shaped.

20 14. The invention as defined in claim 12 wherein said particulate collecting member has at least one surface positioned to engage an external receptacle to cause relative sliding movement of said particulate gathering member with respect to said tubular member, and moving the particulate collecting member to the particulate discharge position includes engaging these surfaces.

15. The invention as defined in claim 11 wherein said agitator includes a propeller mounted on a propeller shaft.

5 16. The invention as defined in claim 11 wherein said particulate collecting member includes drain openings to allow fluid to drain therefrom when the device is removed from the liquid.

10 17. The invention as defined in claim 12 wherein said at least one surface includes at least one member attached to said particle collecting member.

18. The invention as defined in claim 11 wherein said mechanism for engaging and moving said device is connected to said tubular member.

15 19. The invention as defined in claim 15 wherein said propeller is disposed within said hollow tubular member.

20. The invention as defined in claim 11 wherein the liquid is a molten salt and the particulate matter is sludge.